

IN THE SPECIFICATION:

Please rewrite the sixth paragraph on page 2, which starts "Brief description of the accompanying drawings" as follows:

Brief description of the accompanying drawings

Fig. 1a. Information storage in DNA. Structure of prototypical single segment information storage in DNA strand.

Fig. 1b. Information storage in DNA. Structure of prototypical multi segment information storage in DNA strand.

Fig. 2. Encryption of extended ASCII character set in terms of DNA bases

Fig.3. Encryption Key. Extended ASCII characters in terms of DNA strands

Fig. 4 is a process sheet for encryption and storage showing the encoding of digital information for "WELCOME" using the DNA sequence TTAGTACATAGCTATGTACCTAACTACA (SEQ ID NO: 5) and the following primers:

Header Primer: ATTATATATATATTATAT (SEQ ID NO: 8)

Terminating Primer: TTTATATATATATTATTT (SEQ ID NO: 9)

Continued Tail Primer: TTTATATATATATTACCC (SEQ ID NO: 10).

Fig. 5 provides a process summary for encryption and decryption of digital information for "WELCOME" using the DNA sequence of SEQ ID NO: 5 and the header primers of SEQ ID NO: 8.

Fig.4.— ~~Process sheet for encryption & storage~~

Fig.5.— ~~Process summary~~

Please replace the second paragraph from the end of page 4, which starts "b)

The input information" with the following:

b) The input information is then encrypted character-by-character using array generated in step 1. The basis is ASCII values of each character is matched with the element no. of the array of step 1.

Encryption of the text "CSIR" in terms of DNA bases may be:

TATGTTTCTATTTTAC (SEQ ID NO: 5) where:

C is represented by DNA sequence TATG

S is represented by DNA sequence TTTC

I is represented by DNA sequence TATT

R is represented by DNA sequence TTAC

Please replace the fourth paragraph on page 5, which starts "g) The encrypted DNA" with the following:

g) The encrypted DNA can then be transported on paper, cloths, buttons or through any other medium.

Isolation decryption of above encrypted DNA sequence **TATGTTTCTATTTTAC**
(SEQ ID NO: 1):

Please replace the seventh paragraph on page 5, which starts “c) Obtained sequence is” with the following:

c) Obtained sequence is interpreted (integrated if multi-segment before interpretation) using DNASTORE software. The basis for retrieval is a string of 4-bases each at a time is taken and matched with array as generated in step 1 of encryption and storage. The element number of matching value is taken and converted to its ASCII equivalent.

If the retrieved sequence is TATGTTTCTATTTTAC (SEQ ID NO:1). The Decryption would be:

first 4-bases i.e. “TATG” would be in the array storage and encryption 67 = C
next 4-bases i.e. “TTTC” would be in the array of storage and encryption 83 = S
next 4-bases i.e. “TATT” would be in the array storage and encryption 73 = I
next 4-bases i.e. “TTAC” would be in the array of encryption 67 = R
Integration of above decrypted values in the same sequence as retrieved is “CSIR”.

Please replace the first paragraph on page 6, which starts “Example 2. Some examples” with the following:

Example 2. Some examples of DNA encryption for textual data

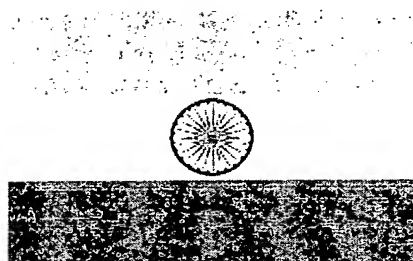
Digital Information	Encrypted DNA sequence
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WELCOME	TTAGTACATAGCTATGTACCTAACTACA (<u>SEQ ID NO:2</u>)
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WORLD PEACE	TTAGTACCTTACTAGCTATAAGCTTTCCTACATAGG TATGTACA (<u>SEQ ID NO:3</u>)
INDIA	TATTTATCTATATATTTAGG (<u>SEQ ID NO: 4</u>)
CSIR	TATGTTTCTATTTTAC (<u>SEQ ID NO:5</u>)
CSIO	TATGTTTCTATTTACC (<u>SEQ ID NO:6</u>)

Please replace the paragraph bridging pages 6 through 13, which starts, “Example 3. A JPEG image encrypted” with the following:

Digital Information



Encrypted DNA sequence

TAAATATTTAGAAAACAATCTCGTGGCGATC
 GCGCCATCGGCTAACCTATCGATCGCTGGT
 CGCGTATCAACAATCGTCCGGTCGGTCGCGC
 CCTACGGGCTCTTCGAACCCCGTAGGCGAC
 ACGGCGCGGCGGATGATTGTCGCCTTGCTA
 CCCGTGGTGCGCCAGACCTTCGACGCTCC
 TGGTACCTGCGCCTCATCGTTATCTTTGTTG
 GAGTGCAAGATGGAGAGTTTCCCGGACGGC
 TAGCAAGCCTGCGTAATATCTCCAAATGTCC
 AAAGCTTATTGTTTTCAATAACGTGATCCTTT
 ACCTGCACATTAGTATTATCACCAGCGTGCA
 CCCATGCGGGCGCCAACCTTGCTGGACTTC
 GACGCCGCTGTCGTTGCCCTCTGAGTGAAT
 GATTGTGCCCACTGTGGTGGGGCGCCTAGT
 CGGTCGGTCGAGGTGTTCAATTAATGGATCG
 ATCGACCTATCGAGGAATCGATCGATCGAT

CGGGCGATCGCGCCATCGATCGATCAGTCC
TCCTACGCCGGCTCTCTCTGCATTTAGCTC
GCTTATCGAGAGGCCTGTGCAAGGAGCCCT
GTTACATTGGGCTATCTAAGACATGGGGAC
AGTCGGCCGACAGAGTATAATAGGAACCAC
GCCTAATGGATAACAGCTTTTCGAAACCCAC
TCCAGAGCCTGTTTACTCTAATTGGCTCCG
GGGCTGATGGTGAGGGCTGTGAACCCGGA
CTCCCAGCCTAGGGAGTACAGACCATGATC
CCTATGCCGGATTAGCCCTAGGCTGTCACA
CTAAGCTATCCTCAGCGTGAGCGTGTCGG
ACTTCGCAGGCTGTGCGTCTTGAGTGCGCG
AGTGACGGGCGTGCGGATCCGCGCACGA
ACGCTTCGTGTTTCGGTCGTCTTCAGACC
GCCCAACTTTCCAGCCATCCAGGTAGCCAC
GCAAGCACATACACATACAGACATTTTATAA
TCCACTCTATTATCCAATCTTTCTGCTGATC
TGTCTACCTCGTAGGCTCCCTGGCTTAAGT
GCTAACTCACCAAAGTCCCGACCTACCAAC
CCTCCGTCTTACCACCCTCCTCGCCGCCCG
GCTGCCCTGCCCGCTATGCGGGCAGCATTG
CTAGCCACACAGCAAGCATCAGGGCCTGCG
TCAACGCACGCTCCGTGCGCCGGGGCCGCTC
GTCGGTGCGGAGGGGGGAGCGAGGGTAG
GCATGTGGGGTGGATCGCGCTTGGAATCCT
CGGCTGATTTGCTGACCGAGCCGTAGAATG
ATGCTCAGAAGGAGATCGAGATAGACACGA
TACTTATCAGTCTGTGTGTATGTACGTTTCT
CCGTGCGTGGGTAGGTTGGTCGATCGATTG
ATCTACGTTAATCCCACTCTGCGGCGTGAC
ATAATGAATTACCCGCCGCCCACTGTGCTG
CGAAACCCAGTTTACTCAGTTAATCCGACTA

TGCCACGGTACAAAATATCCGGGGTGCATC
CGACTTTGCAAATGAATCTAAAGCGCTACGT
TATTGTAAAGATCGTAATTAACGAAGCGGTC
GTTAATTAATCTGAGGTGCAGATGAATACAT
TTAAACCATGCAGTTATTCATCAGTCGCATC
GCAAACCTGTAGACGCTGAATATTAGGTATG
ATTAATGATACGCGTGATGACAATTACGTGT
TTAAGCGCAATTAATTCTGGTAGCGTTATGC
CTGTCAAGGCGGTCCTACAACTAGGTTCGA
TCCTTACGACTGGAAGATGGCTCTACACAC
GGACCCCCCAAACCAATTATAGTTACCTAGT
CCTTAAAAACCATACTAGTTTGGCTTTATTG
ATACTAAGACTAAGCTTACGTCCTGACTCGC
GATTAATGGACACACGTTTCCTGACAAGCTC
CTCGGGGGCCATATATATGCCTGACGCCAG
AACTGGTCTCATTCTCGATATGAAGCGACC
CAAAGCGCGGTGTATCGTTGTGAATCCAA
CTAAGATGCATCGCGCGCGGCGGATCAATC
TTACGAGACTCAGGTAAGTGGTATCGTG
GCTGCCCTTGAGCGCTTAAATCGTACTTCGT
CGCGATTGATTGTATTATAACAATCAGCAA
ATTAAATCGATGGCGGACTTTATAAAGCTAA
ACTACGCCTTTAAGTTACGCGCTGTGAGCA
GCTGAGGCCGGTTCCTTAAGTTCCATACATT
CTATCAATAGCGCTTCCTGCCTAGGTATGG
GCTCTAGGGCTATCTTGCTAAAGTTGACTCA
GAGAGAATTACCTCGGAATAAAACAACACG
CGGCAGTCAGATTTTGTCACTATTTTACGT
AACTAGGGTGATCTCCGGAATGTCAACTCC
GGGCCCCCACACGATGGTGGAGATCTCCTC
GCCCGTGGGCTTCTGGACTAGACGTTAGGG
CATGCACATACGTTGACGAAATTGTTACGCC

GAGACGATAGAATTTATAACCTTTCCACCAT
CTAGTATGAGGGATTCATACGCTGCCCTTCT
CCTAATAGGAACGTACACTAAATTAATTGCC
GTGCTACCAATGCGACTACTTTGGGATAAC
GGCCTGCGGTTGTCGTCGGGTGAACTATCC
TATCGTTGACTCTATAGCAAGGCTTATCGT
GCTAACTAATTTACATAGTAGGACTATCGCC
ACACGGGATGCACATACCCGACTATCGGGT
CCCAGAGACTACGTTGAGGAAAGCCAGGCT
TAGTTTTACACATTAACCGATGGCGTGACGG
GGACTTTGTCGTCGGTACATAATCGTCAGG
TCATCAATTCCTGCTGATATGGCGAAATTGC
TGAGTATCTCTATGGACTAACAACCTGCTAGG
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AACACCATCGTGCATGCCGATCGACGTGGC
ACAAACAAATTGAATAGAAGGCATACTATAT
CGTCTACTTGGTATGGGGCACCTTGCCGTC
CAAAACCGTTTCGAAAAAAGATCTGTTTCTAA
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GACACCTCCTCCCAGGTTCAATGTGAAGTG
ACATCGCAACATGAACCCCGCGGGGACAGA
ATGCAGTCTTCCCTGCTTAATCTCGTTGGGT
ACAGCTGAAATGCAGTCAGGCGCGGATGGC
GGCCCCTCACGGGATATGGTGATAATGTTT
ACTAGCTTTACACGTTTCTAGCAGAATTGCG
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TGCCCTCTCACATCCGAATTGGCGATGGATG
TCTCTAAATGAATTCTTATGGTCGCGACTTT
AACGCTTCCAAGATAACAACAGATGGTGCT
CCTGAATCACATCTCCTTTGATCTTGACATG

GTTCCACCCTGTTCCCCGGGCCAACCCGTT
AAGCCTTACTATGTGATTTCGACCTAATATGG
ATAGTCCATCCGGCCATCCGTGTACAATAAT
CCACAGACTCTGTAATTTAGAATTACATGCA
CTCCTCTCATCGTATCGGCCTAATGCTAGG
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CGATGGCCTAGGTTGAAGGGGGATCAACA
CGGTGTACATAGGCCCTACAGCTGACGTTC
ACGTATGATGAATGCTTCCTCAATGTAATGC
TCGAATCGAGAATTCTCAGTCTTAAGGGCA
GCCATCGGAGCACGTGGCGCGGCAATATTC
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TCGGGTCGATGGTCAAGCGGCACAGTGAC
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CGCCCTGGGATATATAGGCCGTCAGCACGT
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CTAGGGCCGATGAATTACAAGCAGGTGAAT
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CGCGGGTGTTGACGGTTAAGGTAGCTCGG
GCGCGATAGATGATACTGGCCCGAGACCA
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CGAATACTGGTGCTATGCCTAATTCTAGTAG
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AAGTCTCTTGTTCCCGACGACGTAGCCAAT
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CACGCGCCCTGACGTTCTATTGTAGTGGAA
CTACATTCCCGTCCCACGATAACTGACGTC
GTA CTGCGTGGAACACTAGTACCGTCCGA

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GTATGTTGAGGAGCGGGATGATGGCGACC
CTCCCCAACCGGGGCCCTCTGGTCCGCCTA
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GCTTATTTTCCATAGGGTTTTGCTCCGGACC
ATCCGGTCGTGTAGCGCGATTGACTTGCCG
GGTTGTGTCCCCGTATCCAGGTCACGACCT
CATGGGGAACTAGTGGCTGTCCGGCAGTAT
CCTGGTACGCACCTCATGTGGTATGCGTGG
CTGTTGGTCCGTATATGGACCTATATATGGA
TCGAAGC (SEQ ID NO: 7)

JPEG image of Indian Flag

File Size = 1981 Bytes

DNA bases = 7924

After page 13, last line, delete the present Sequence Listing in entirety and replace with the Sequence Listing attached hereto.